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### COMPARATIVE EFFECTIVENESS OF COMMONLY USED DEVICES FOR CAROTID ARTERY STENTING

#### i2 Poster Contributions

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**Background:** A variety of different stents and embolic protection devices (EPD) are used for carotid artery stenting (CAS). Little is known about current usage patterns and differences in outcomes with these devices.

**Methods:** We analyzed 9863 consecutive carotid stent procedures in the NCDRR CARER registry performed between January, 2007 and March, 2011. We compared baseline characteristics and crude and multivariable-adjusted rates of in-hospital combined death/stroke/MI among patients treated with Acculink/Accunet, Xact/Emboshield, and Precise/Angioguard stent/EPD combinations.

**Results:** In 80.1% of cases, stents were used in conjunction with their specific, corresponding FDA-approved EPD. The Acculink/Accunet (n = 2508, 25.4%), Xact/Emboshield (n = 2460, 24.9%), and Precise/Angioguard (n = 2358, 23.9%) stent/EPD combinations were used in 74.3% of all cases with the Protégé/SpiderFx (n = 382, 3.9%) and Wallstent/Filterwire (n=181, 1.9%) devices used in fewer cases. In unadjusted analyses, the Precise/Angioguard system was associated with a higher rate of the primary outcome than the Acculink/Accunet (3.1% vs. 2.0%, p = 0.02) and Xact/Emboshield (3.1% vs. 2.3%, p = 0.10) systems. In adjusted analyses, differences between Precise/Angioguard and Accunet/Acculink (OR = 1.64, 95% CI [0.98-2.76], p=0.02) approached significance. Differences between Precise/Angioguard and Xact/Emboshield (OR = 1.31, 95% CI [0.82-2.08], p = 0.15) as well as those between Xact/Emboshield and Accunet/Acculink (OR = 1.25, 95% CI [0.76 - 2.05], p = 0.27) were not significant.

**Conclusions:** In domestic practice, the Acculink/Accunet, Xact/Emboshield, and Precise/Angioguard carotid stenting systems are used in the majority of cases with nearly equal frequency. All are associated with low rates of death/stroke/MI. Our analysis showed a trend towards higher adverse events with use of the Precise/Angioguard combination when compared to the Acculink/Accunet carotid stenting system. This could be attributed to differences in devices or unmeasured confounders such as operator experience/specialty and other unevenly distributed patient-level characteristics not captured in this registry.